2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

423 618 wrangling as to garden boundaries, but these petty disagreements within the clan, so to speak, are as a rule easily settled. The land disputes which bring endless trouble and labour to the magistrate are disputes between clans. While the land is owned communally the garden is owned individually. Between two adjacent gardens the boundary is made of felled trees, laid end to end, sometimes in two rows so as to form a path between. So long as this ground is under cultivation, not only the produce of the garden but the garden itself is individual property, and a displacement of the boundary would mean a quarrel.

I may now describe the system by which the land is used: it may be called a Rotation of Areas. Each clan will possess a number of tracts of land, which bear locality names. These may or may not be contiguous. Often, owing to migratory habits or to the reclamation of some distant and hitherto unoccupied block of land, they may be somewhat scattered.

A diagram of the areas about Korisata, an Aiga village, though quite inaccurate as to their relative sizes, will serve as illustration. In extent these areas differ greatly, some being measured by acres, some by miles. The boundaries, not obvious to European eyes, are tracks, swamps, creeks, clumps of palms, and so forth. At any one time the village gardens will probably be found in one large clearing, mostly abutting upon one another.

● 311 241 As the gardeners use up the taro in their old gardens, so from time to time they extend the clearing and plant afresh. Never in the Northern Division, as far as I know, do they immediately plant a second time on the same ground. Thus the gardens gradually extend, or rather progress over a whole 'area', the abandoned parts quickly clothing themselves in a rank luxuriant growth of grass, bushes, and young saplings. When one of the 'areas' has been used up in this manner—and where it is an extensive one this may not be for two or three years—the clan will make a fresh beginning on another

2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

area; when this is in turn used up, on a third, and so on. By the time all the cultivable areas have been utilized in succession, and a return is made to the first, it is not unlikely that fifteen or twenty years have elapsed. Sometimes, indeed, this intervening period is still longer: I have talked to a man, of say thirty-five years, felling timber along the edge of an existent clearing, at no great distance from the village. He was virtually the headman of his clan and a more than usually reliable informant. He told me that within his time the clan had never before used that particular ground for gardens. His elder brother, however, remembered when the gardens had been there: he was rather decrepit and perhaps fifty.

By way of definitely illustrating this system I may refer to the areas belonging to the Clan Serugahije (which numbers thirteen men, supporting ten women and twenty children). The areas are:

1. Manigausi.
2. Babari.
3. Simbiri Beari.
4. Kimeneda.
5. Ususu.
6. Hasita.

The last to be abandoned was Manigausi, which, when I made a note of it, was already thickly covered with low scrub; all the present gardens were in the area Babari, which was still unexhausted; and the one marked down for the next attack was Simbiri Beari.

One of the larger villages (in which at least two clans were represented) enumerated seventeen areas, ten of which were apparently under virgin forest and used for hunting and fishing alone.

When the gardener finds himself clearing once more on the familiar ground which was used perhaps many years before, he does not necessarily plant on the precise spot which was his previously. There is, as a rule, so much ground to spare that he is welcome to begin where he pleases, and without the risk of offending a fellow clansman. It does sometimes happen, however, that a man acquires a sort of prescriptive right to the imme-

2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

diate locality where he has worked, and accordingly we sometimes find an easy-going division of an area between families or branches of the clan. No doubt this becomes a stricter division where the available land is circumscribed; for individual ownership of land probably has its origin in scarcity of land.

The examples I have given come from the Aiga tribe, between the middle Opi and Kumusi rivers, where there is no practical limit to cultivable soil, and where, indeed, there still remains a good deal of apparently virgin forest. On the foot-hill country in the south of the Division, where the population is often denser, and in particular on the Buna plains, where the *kurokuro* grass has encroached on the bush to so serious an extent, the same system indeed prevails, but the intervening periods must be shortened.

As will readily be imagined, this system tends to bring about a shifting, almost nomadic, style of horticulture. Sometimes the area is at no small distance from the permanent village. Then we shall find families living for weeks at a time in their garden houses, while their more regular but scarcely superior dwellings in the village stand deserted, with a mat fastened across the doorway. The gardener may plant coco-nuts and betel on the site of his temporary lodging: this is the first step towards the establishment of a new village. By the time that ground comes to be cleared and planted again, these palms will have grown to a good size, and it is very natural, with a people so perpetually given to clan disintegration, that some families should settle permanently on the site of their distant gardens. This, in my opinion, is the ordinary reason for the simultaneous birth of a new village and a new clan.

5. *Clearing and Deforestation*

One was at first tempted to believe that this Rotation of Areas, with such long intervening periods, was devised like the fallow in the interest of fertility. The

2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

241 true reason is so obvious to the native that he seldom
311 thinks of explaining it. The Rotation of Areas is, in fact,
a labour-saving device. With the implements at his dis-
[412] posal—formerly his finger-nails, a stick, and a stone axe,
nowadays his finger-nails, a stick, a tomahawk, and an
18-inch trade-knife—it is infinitely more difficult to over-
come the dense mass of vigorous weeds and bushes which
spring up in the wake of the taro, than to clear away the
bush of ten years' standing, with its somewhat meagre
trees and straggling underwood. It is the primary growth
which the native gardener cannot cope with. What he
does is to leave the matter to nature. After a few years
the saplings have sprung up and overshadowed the weeds
and shrubs, and in due course as the bush develops these
latter are replaced by a much thinner and less formidable
array of trailers and forest undergrowth. Even in bygone
days, when a tree had to be brought down with a stone
axe, this light bush was an easier problem than the
primary growth; now that stone has been replaced by
steel, it is easier beyond all comparison.

241 Sometimes the village will be almost deserted, while
313 its population—men, women, and children—are together
461 engaged in clearing. The work proceeds with a leisurely
persistence, continual conversation, and occasional spells,
when the woodman sits on a fallen tree and rattles his
lime-stick and chews his betel. Now and again some
[533] cheerful worker will burst into song as he wields his
axe, a mere bar or two of melody, sung at the top of his
resonant Orokaiva voice. In beginning and ending it
is strangely abrupt, more like a musical shout or a yodel
than a song, and altogether a very good-humoured sound.

241 Tree felling is for the men; the cutting and dragging
313 aside of undergrowth for the women and children. The
heavier trees are suffered to lie where they fall, and will
remain till long after the garden has been used and
deserted. The lighter timber is stacked in high pyramids
to dry for firewood, or else used, end for end, as borders
for individual plots. Only the branches, leaves, and

2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

(*a*) *Defects of the Present System.* We have seen the Orokaiva gardener at work in his forest clearing, and it is perhaps doubtful whether we should admire the simple skill which has met his simple requirements so effectively, or deplore the primitiveness which seems to give such small promise of development.

We have seen that he has hardly a tool to his hand; that he does not till the soil; that having planted his plant he leaves it for the most part to the mercies of the elements, trusting as much to a muttered spell as to a back-bending diligence in the tending of it. We have seen the untidiness of his garden plot, the absence of any regularity in his planting; a certain methodical persistence in his labour, but no developed system of co-operation and no effective division of tasks. We have seen that, despite the tropical abundance in which he lives, he is reduced to hunger by a whim of the weather, for he does not lay by overmuch except towards an engorgement with his friends. And we have seen that he is restricted to, and apparently content with, a general monotony of diet.

Worse than all these is the prodigal system which I have called the Rotation of Areas. This is, of course, no new thing, but a method common to all primitive forest gardeners. It is in effect the same system as the *jhuming* of India, the *chena* of Ceylon, and the *ladang* of Malaya, and on one count or another has everywhere met with severe condemnation. Willis states that 'Vast areas of good forest land have been ruined in southern Asia by this destructive practice, and in most countries *chena* permits for crown land are only issued now under stress of very hard times and failure of the regular crops'.[1]

The view that it is primarily a labour-saving device is endorsed by Ling Roth,[2] who says,

'it is probably rare that cultivated land is deserted on account of its

[1] Vide J. C. Willis, *op. cit.*, p. 2.
[2] H. Ling Roth (*J. A. I.* xvi, pp. 109–22). Quoted from Thomas, *Source Book for Social Origins*, pp. 102, 103.

2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

241
311

arriving at the state described as " exhausted ", i.e. when crops can no longer be grown in consequence of the withdrawal, through too much cultivation, of their food constituents, for savages do not cultivate on such an intense system as to bring about that state of the soil '.

The same author remarks of the Dyak rice-growers, that they ' do not desert their farms because the land is exhausted, but because it is less trouble to cut down fresh jungle than to eradicate the weeds which have sprung up after the padi has been gathered '.

There are two arguments against this system of land utilization in the Northern Division; first, that it is economically wasteful; second, that it is unsettling and makes for social instability.

With regard to the first question there can be no doubt that, although under present conditions the Rotation of Areas is a labour-saving system, yet it involves a great expenditure of time and energy which might be avoided, or more profitably turned to account, under a system of more intensive cultivation. It will be the thesis of this section to advocate such a system. In the meantime it is enough to point out that the gardener not only spends a good deal of time on the track between his house and his garden (which may be literally miles away), but is continually employed on what is an unprofitable task—because it could be an unnecessary one—viz. the felling of forest timber.

This loss of time and this unnecessary increase of work may be trivial points, because the native generally has too much of the one and too little of the other. In two other respects, however, the Rotation of Areas is more obviously wasteful. In most parts of Papua the population is sparse, but it is well known that the native is reluctant to sell the land which his people have used for cultivation. The system we are discussing necessarily makes the area *per capita* very large. It must be admitted that the land problem, i.e. the acquisition of land by the European capitalist, has not been a very serious one in Papua. But if or when this problem arises, the difficulty

2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

of it will reside in the present system of an *extensive* and extravagant use of the land by its native owners. Apart from the other advantages which should attend a more *intensive* cultivation, it should make available great areas of land (if they are required) for European enterprise. Lastly, the Rotation of Areas is indirectly responsible for the deforestation of the north. This question has been discussed already (pp. 131–3). We have seen that the spread of the grass lands is due proximately to the negligence of the natives, but it is the fact that the scene of their labours is constantly changing that makes the expansion of the grass plains a serious problem.

Apart from these economic drawbacks the system which I have described exercises a moral or social influence which seems directly inimical to progress. The tendency of the Orokaiva (and of many other peoples in Papua) to subdivide and scatter has caused the magistrate continual anxiety and trouble; and the undesirability of this habit has long been recognized. As the Native Regulation expresses it,

> 'The practice of people abandoning their old homes in settled villages and scattering themselves in small groups over the face of the country is growing in the land. Experience proves that this isolated way of living tends to breed animosities, and increase superstitious fears and to debase those that follow it.' [1]

In pre-Government days, if the natives are to be believed, the villages were very commonly larger than they are at present. Tribal enmities and the constant fear of raiders made it necessary for the members of the clan to cluster together for mutual protection. But with the advent of Government control this fear has passed away. The individual clan or even family feels secure from attack however isolated it may be. Consequently we find a growing tendency for the small group to form an independent settlement. I have already referred to this matter (p. 129) but a repetition may be pardoned.

[1] Native Regulations, 1922, No. 90.

2: Williams E, G-5 (1923-1925) 1928
OJ23 Orokaiva OJ23

My own observations lead me to believe that the commonest way for such an independent settlement to come into being is for a few related families, or sometimes a single family, to form a temporary settlement or camp on the distant site of the garden. In the very simple organization of the Orokaiva the family group is self-sufficing. There is no economic necessity for cohesion between family groups, and to avoid the trouble of coming and going the temporary settlement is easily converted into a permanent one on the spot where its supplies are found. Thus it will appear that the habit of making gardens on distant sites, and of changing these sites from time to time, tends to encourage a shifting, semi-nomadic kind of horticulture. There can be little doubt that the Rotation of Areas system is one of the most potent causes of village and clan disintegration.

(*b*) *Intensive Culture and Closer Settlement.* The remedy for these negative and positive evils lies, I believe, in a more intensive culture and in the closer settlement which would accompany it. Instead of a wide area of forest with here and there a patch titillated into temporary productiveness and then overwhelmed by the tropical bush or sometimes subjugated by the ever-advancing long grass, we might hope to see a continuous tract of land, a garden settlement, which, if not kept under continuous cultivation, might still be kept under human control. Such may be a very distant ideal, but I believe the advantages which would come of its realization may be expressed in more general terms than those of mere gardening.

It has been affirmed often enough that various civilizations have been based upon various kinds of agriculture, or even upon the cultivation of particular products; as for instance those of Egypt upon corn, of Mexico and Peru upon maize, even that of Uganda upon the banana. Such statements are perhaps more plausible than really demonstrable: they are usually backed up less by facts than by inferences. However, it may well be that